S/203/62/002/002/009/017
I046/I246

The role of...

ASSOCIATION: Yakutskii filial SO AN SSSR (The Yakutsk Section of the SO AS USSR)

SUBMITTED: December 1, 1961

Card 2/2

L 42436-65 EWT(d)/FSS-2/EWT(1)/EEC(k)-2/EWG(v)/F C/EEC-4/EEC(t)/EED-2 Pe-4/

ACCESSION NR:

AUTHOR: Vershinin, Ye. F.

103
102

TITLE: Some characteristics of auroras as a radar target and allowance for ionospheric-

SOURCE: AN SSSR. Yakutskiy filial. Institut kosmofizicheskikh issledovaniy i aeronomii.

96-106

TOPIC TAGS: aurora, meteorological radar, radar target, ionosphere, troposphere,

ABSTRACT: In this paper, an attempt is made to explain some of the characteristics of

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L 42436-65
ACCESSION NR: AT5006970

density n, extends along a line of force of the earth's magnetic field. The number of re-

$$\mu = \frac{}{b_i + b_e} \quad (1)$$

where b_i, D_i and b_e, D_e are the coefficients of mobility and diffusion of ions and electrons, respectively. The following relation exists between D and b: $D_i b_i = kT e_0$, where $k = 1.3 \cdot 10^{-16}$ ergs/degree is the Boltzmann constant, T is the absolute temperature, $e_0 = 4.8 \cdot 10^{-10}$ CGSE is the electron charge, $b_i = 1.3 \nu \lambda_i$, where ν is mean thermal velocity; λ is the length of the mean free path. For ions:

$$D_i = \frac{0.34 \cdot 10^{20}}{n} \sqrt{T \frac{m}{M_i}}, \quad (2)$$

where n is the concentration of neutral particles, m and M_i are electron and ion mass, respectively. With allowance for the earth's magnetic field:

$$D_{e\perp} = \frac{D_{ei}}{1 + i\omega_i \sigma^2}. \quad (3)$$

Card 2/5

where $D_{\perp}$ and $D_{\parallel}$ are the components of D_a in a plane perpendicular to the magnetic

diffusion process is

$$\frac{\partial n}{\partial t} = D\left(\frac{\partial^2 n}{\partial \rho^2} + \frac{1}{\rho}\frac{\partial n}{\partial \rho}\right). \qquad (4)$$

density as a function of distance ρ from the axis of

a circle with the radius ρ_0, the following equation is obtained

$$r = \rho_0 \sqrt{\ln\left(\frac{\rho_0}{\rho}\right)^2} \qquad (5)$$

$$n'(\rho, t) = \frac{\quad}{4\pi Dt}\exp\left[-\frac{\quad}{4Dt}\right]\left(\frac{\quad}{2Dt}\right)$$

where $n'(\rho, t)$ is the surface density of electrons at the time of observation; $a = 2\pi\rho_0 n'_0$

ρ [illegible] for ρ_0 from 0 to R.

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When $\rho_0\rho/2Dt < 1$ the following expansion is correct

$$I_0\left[\frac{\rho_0\rho}{2Dt}\right] = \ldots + \frac{\rho_0^2\rho^2}{\ldots} + \frac{\rho^4}{2^4(Dt)^4} + \ldots \quad (7)$$

With only the first two terms taken into account

$$n(\rho, t) = \frac{n_0}{2Dt}\exp\left[-\frac{\rho^2}{4Dt}\right]\int_0^R \exp\left[-\frac{\rho_0^2}{4Dt}\right]\rho_0\,d\rho_0 + \quad (8)$$

$$+\frac{\rho^2}{16D^2t^2}\int_0^R \exp\left[-\frac{\rho_0^2}{4Dt}\right]\rho_0^3\,d\rho_0\Big];$$

$$\frac{n(\rho, t)}{n_0} = \left(1+\frac{\rho^2}{4Dt}\right)\exp\left(-\frac{R^2}{4Dt}\right) - \left(1+\frac{\rho^2}{4Dt}+\frac{\rho^2R^2}{16D^2t^2}\right)\exp\left[-\frac{\rho^2+R^2}{4Dt}\right].$$

For a point of observation lying on the axis of the cylinder (ρ = 0) the diffusion

For a point of observation lying on the axis of the cylinder ($r = 0$) the diffusion equation reads

$$\frac{n(0, t)}{n_0} = 1 - \exp\left[-\frac{R^2}{4Dt}\right]. \quad (9)$$

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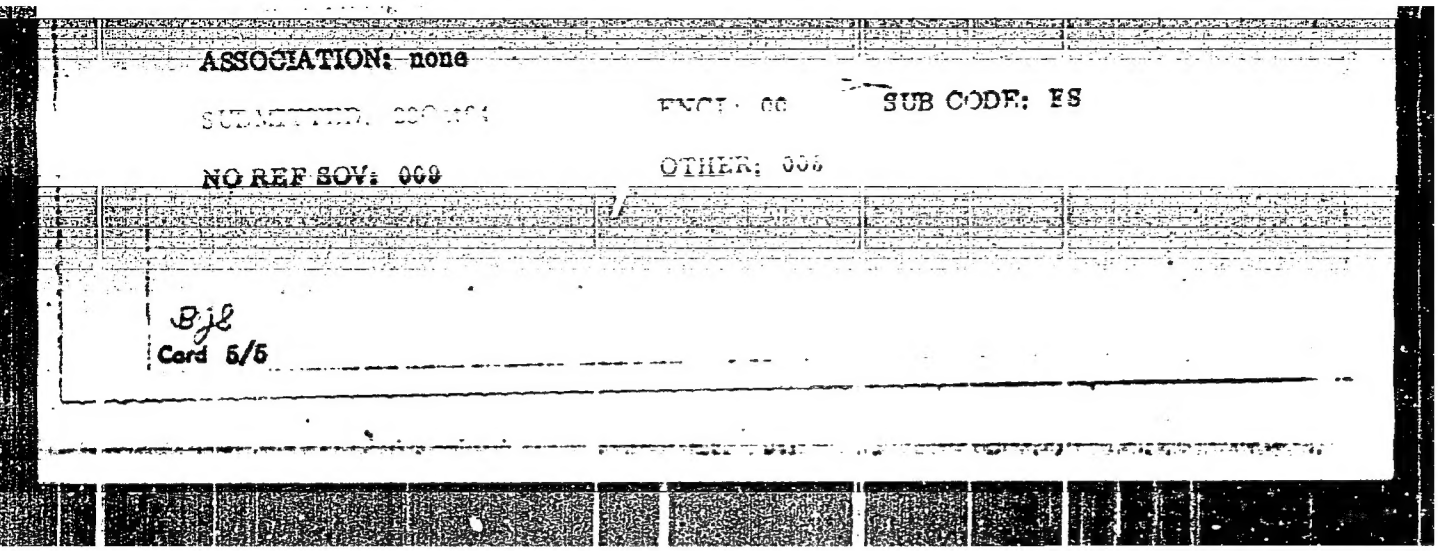
L 42438-65
ACCESSION NR: AT5006970

...of a cylindrical inhomogeneity is not dependent on



ASSOCIATION: none

SUBMITTED: [illegible] ENCL: 00 SUB CODE: ES

NO REF SOV: 000 OTHER: 006

BJL

Card 5/5

BLINOV, N.I.; KONTROSHCHIKOV, P.V.; LYUBIMOV, V.P.; SALAMATOV, M.A.; VERSHININ, Yu.I.

Increasing the strength of core bits. Razved i okh. nedr 24 no.12:24-31 D '58. (MIRA 12:1)

1.Sverdlovskiy gornyy institut.
(Boring machinery)

SOV/132-58-12-4/14

AUTHORS: Blinov, N.I., Kontorshchikov, P.V., Lyubimov, V.P., Solomatov, M.A. and Vershinin, Yu.I.

TITLE: To Increase the Durability of Shot Boring Bits (Povysheniye stoykosti drobovykh koronok)

PERIODICAL: Razvedka i okhrana nedr, 1958, Nr 12, pp 24-31 (USSR)

ABSTRACT: The Sverdlovsk Mining Institute conducted extensive tests with different shot boring bits to establish the main factors which increase the resistance to wear of the bits under different geological conditions. These factors are: 1) the influence of the hardness of shot boring bits on the drilling speed; 2) the influence of the chemical composition of these bits on their resistance to wear and on the drilling speed; and 3) the influence of the shape of the bits on their resistance to wear and on the drilling speed (See Graphics 1 to 7). The following conclusions were reached: 1) in the drilling of bore holes with tempered steel shots, the boring bits must have vertical rectangular indentations. They are most simple to manufacture, maintain constant pressure on the rock and increase drilling speed; 2) the drilling speed depends on the shape of the indentation, its width and height

Card 1/2

and also on the thickness of the walls and the hardness of the metal of the bit. Bits with a rectangular indentation and with 10 - 12 mm thick walls give the best results; 3) the basic parameters of the bit must be as follows: a) a rectangular 150 - 200 mm high and 1/4 - 1/8π D wide indentation; b) the walls of the bit must be 10 - 12 mm thick; c) the total height of the bit must be 250 - 300 mm; 4) the shot boring bits must be made from steel of the brands U12S, 30KhGS, 40Kh and 45, tempered for a metal strength of 25 - 30 H_{Rc}.
There are 7 graphs, 1 table and 10 Soviet references.

ASSOCIATION: The Sverdlovskiy gornyy institut (The Sverdlovsk Mining Institute)

DOBZHINSKIY, M.S., inzh.; VERSHININ, Yu.N., inzh.

Supports without insulators. Nauka i zhizn' 29 no.1:64-65 Ja '62. (MIRA 15:3)

1. Transportno-energeticheskiy institut Sibirskogo otdeleniya AN SSSR (for Dobzhinskiy). 2. Novosibirskiy inzhenerno-stroitel'nyy institut (for Vershinin).
(Electric lines--Poles)

Vekshinskiy, Yu.L., kand. tekhn. nauk

Concrete as an electrical engineering material. Trudy Gos. nauch.-issl. inst. energ. no.2:5-11 [n.d.].

Electrical strength criteria of crystalline dielectrics. Ibid.: 33-51

(MIRA 17:11)

VERSHININ, Yu.N., kand. tekhn. nauk; DOBZHINSKIY, M.S.

Some electrical and physical properties of concrete. Trudy Sib. nauch.-issl. inst. energ. no.2:12-23 '64.

Dependence of the electrical strength of concrete on its porosity and mechanical strength. Ibid.:52-56

Electrical and physical properties of electrically conductive concretes. Ibid.:73-87

(MIRA 17:11)

VERSHININ, Yu.N., kand. tekhn. nauk; LOGVINENKO, A.T.; MOKYAKH, L.N.; FEDOROVA, Z.V.

Electrical conductivity of cinder minerals and their hydrates. Trudy Sib. nauch.-issl. inst. energ. no.2:24-32 '64. (MIRA 17:11)

VERSHININ, Yu.N., inzh.

Speeding up the hardening process of gypsum plaster in building by the action of low frequency electromagnetic fields. Stroi. mat. 7 no.4:34-35 Ap '61. (MIRA 14:5)
(Electromagnetic waves) (Plaster)

L 19758-63 EWT(1)/BDS AFFTC/ASD/IJP(C)

ACCESSION NR: AT3001940 S/2912/62/000/000/0391/0400

AUTHOR: Vershinin, Yu. N.

TITLE: On the effect of variable electrical fields on the processes of crystallizational structure formation in supersaturated aqueous solutions

SOURCE: Kristallizatsiya i fazovyye perekhody. Minsk, Izd-vo AN BSSR, 1962, 391-400

TOPIC TAGS: crystal, crystallization, crystallography, electrical, field, effect, structure formation, supersaturated, solution, aqueous, gypsum, plaster, plaster of Paris, semihydrate, dihydrate, calcium sulfate, Rebinder, orientation, dipole moment, setting

ABSTRACT: The paper describes an experimental investigation of the effect of a variable field on the process of crystallization and the crystallizational structure formation in supersaturated aqueous solutions, namely, the process of hydrational hardening or "setting" of concentrated aqueous suspensions of half-hydrated Ca sulfate, which is accompanied by the formation of a microcrystalline concretion from crystals of dihydrate. 50-cps electrical fields were employed in the tests. In contact-type tests the electrodes were in direct contact with the test material.

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L 19758-63

ACCESSION NR: AT3001940

In noncontact-type tests an air layer remained between the electrodes and the surface of the test object. The effect of the field on the structure-forming process was judged from the changes of the ultimate compressive strength after short-term (30-sec) exposure. The shortness of the exposure was to eliminate the heat effect. The concentrated suspensions of semiwater plaster were prepared in distilled water with a liquid-to-solid phase weight ratio of 60 to 100%. The precise mixing procedure is described. The short-term electrical-field exposure was performed at various stages of the setting process. The tests showed that the short-term exposures affected the ultimate mechanical strength of the specimens differently, depending particularly on the stage of the setting time during which they had been applied. Three stages are distinguished with reference to the work of P. A. Rebinder and his students (for example, Stroitel'nyye materialy, no. 1, 1960): (1) The inductional period, during which the suspension remains thixotropic; (2) a structure-forming period, during which the first crystallizational contacts which form the primary skeleton of the crystalline structure take place; (3) a third period of hardening in which the reduced supersaturation in the liquid phase prevents the formation of new crystallizational contacts, and the further hardening of the structure already formed from the dihydrate microcrystals occurs through the dissolution of the metastable semihydrate gypsum. The present tests show that each of these 3 periods is characterized by a sharply defined individual character of the action of

Card 2/4

the electrical field. Short-term application of the field during the first period enhanced the ultimate strength of the crystallizational structure in all instances. Application of the field in the second period invariably impaired the ultimate strength of the structure. No noticeable effect occurred in the third stage. Optimal exposure time during the first stage was 0.10 to 0.15 t_{ind}; optimal potential gradient in the contact method: 2.5 to 3.5 v/cm. Once structure formation had set in, the unfavorable field effect increased with increasing potential. With the noncontact method, a voltage difference of 15-13,000 v had to be maintained to bridge the gap, and a glow discharge occurred between the electrodes. A detailed analysis and explanation of the experimental results follows. The mechanism of the action of the field in the first period is attributed to a reorientation process. That period is characterized by maximal supersaturation of the liquid phase in which a process of avalanche crystallization occurs and an accumulation of crystallization material takes place. The superposition of the field produces a translational-rotational motion in the new crystalline formations and the colloidal fraction of the semihydrate, the degree of freedom of which, naturally, is limited by an elevated concentration of the suspension. This motion, in any one microvolume, is the equivalent of stirring, which, because it is variable with time, leads to a reduction of the energy of activation of nucleation in the given metastable system and, therefore, results in an increased nucleation rate. A more refined primary crystallization

L 19758-63

ACCESSION NR: AT3001940

skeleton results from this process, which, even throughout the subsequent stages of setting, leads to an ultimate increase in structural and mechanical strength. It is noted that semihydrated plaster, in addition to its general application in the building industry, is a generally recognized model for the study of the processes of setting of a large number of mineral binders. The practical, as well as the theoretical, interest of the subject investigation, therefore, is evident. Orig. art. has 3 figs.

ASSOCIATION: none

SUBMITTED:	00	DATE ACQ:	16Apr63	ENCL:	00
SUB CODE:	CH, PH, MA	NO REF SOV:	012	OTHER:	002

Card 4/4

VERSHININA, A.G., docent (Perm')

Fortieth anniversary of the Department of the Organization of Public Health Service and the History of Medicine of the Perm Medical Institute. Trudy Perm. gos. med. inst. 43:99-100 '63. (MIRA 17:6)

VERSHININA, A.G., dotsent; ZELEZNEVA, V.T., dotsent

History of interrelations between the Perm Medical Institute and the public health agencies. Trudy Perm. gos. med. inst. 43: 38-48 '63. (MIRA 17:6)

VERSHININA, A. G., Cand Med Sci -- (diss) "Organiztion of medical service of workers of an industrial enterprise. (According to the experience of Bratsk work of medical-sanitary unit No 4)" Mos, 1958. 15 pp (Min of Health USSR, Central Inst for Advanced Training of Physicians), 200 copies (KL, 18-58, 102)

SHEIN, A.V.; GUTIN, N.D.; VERSHININA, A.I.

At the Central Complex Laboratory of the Ural Geological Administration. Zav.lab. 28 no.8:1013-1014 '62. (MIRA 15:11)
(Ural Mountain region--Chemical laboratories)
(Minerals--Analysis)

KNIGINA, G.I., doktor tekhn. nauk; VERSHININA, E.N., inzh.

Photoelectrocalorimetric determination of the quality of ceramic firing. Stek. i ker. 20 no.3:20-23 S '63.
(MIRA 17:6)

1. Novosibirskiy inzhenerno-stroitel'nyy imeni V.V. Kuybysheva.

YEREMENKO, V.V., kand.tekhn.nauk; VERSHININA, E.N., inzh.

Over-all automation of the operation of tunnel dryers.
Trudy Zap.-Sib.fil.ASiA no.3:51-60 '60. (MIRA 15:2)
(Drying apparatus—Bricks)

ACCESSION NR: AT4033989 S/0000/63/000/000/0076/0080

AUTHOR: Kuznetsov, Ye. V.; Valetdinov, R. K.; Vershinina, G. M.

TITLE: Phosphorus-containing polyesters and polyamides of the aliphatic series

SOURCE: Geterotsepny*ye vy*sokomolekulyarny*ye soyedineniya (Heterochain macromolecular compounds); sbornik statey. Moscow, Izd-vo "Nauka," 1963, 76-80

TOPIC TAGS: polyester, polyamide, phosphorus containing polyester, phosphorus containing polyamide, aliphatic polyester, aliphatic polyamide, polycondensation, refractory polymer

ABSTRACT: The article reports on polycondensation reactions involving bis(beta-carboxyethyl)phosphine oxide (previously synthesized by the authors through hydrolysis of a bis(beta-cyanoethyl)phosphine oxide) and ethylene glycol, propylene glycol, glycerol a-chlorhydrin, or hexamethylene diamine. These reactions were carried out to study the preparation of phosphorus-containing polyesters and polyamides of the aliphatic series. Principles of a second order reaction governed for

Card 1/2

ACCESSION NR: AT4033989

the range of temperatures 165—185C and reaction times of 30—240 min. All the polymers obtained, except those based on glycerol α-chlorhydrin, were colorless, transparent, nonflammable, had significantly higher melting points than comparable polymers lacking a P atom (i.e., 50—170C), and were suitable for fiber of film production. Reaction rate constants and activation energies were determined. Orig. art. has: 1 figure and 5 tables.

ASSOCIATION: Kazanskiy khimiko-tekhnologicheskiy institut im. S. M. Kirova (Kazan Institute of Chemical Technology)

SUBMITTED: 29Jun62 ATD PRESS: 3061 ENCL: 00

SUB CODE: OC, GC NO REF SOV: 008 OTHER: 002

Card 2/2

STYUNKEL', T.B.; MIKHALEVA, Z.A.; VERSHININA, I.A.

Conditions for the preparation of silver tellurates. Zhur. neorg.khim. 7 no.12:2816-2817 D '62. (MIRA 16:2)

1. Ural'skiy politekhnicheskiy institut imeni Kirova.
(Silver tellurate)

VERSHININA, K.A.

USSR/Chemistry - Petroleum
Catalysts

Oct 51

"Conversion of Hydrocarbons in the Presence of Oxide Catalysts. IV. Dehydrogenation of Butanes Over a Chromium Catalyst," R. D. Obolentsev; K. A. Vershinina, Ye. V. Skvortsova, Students, Chair of Chem Processing of Petroleum and Gases, Saratov State U imeni N. G. Chernyshevskiy.

"Zhur Obshch Khim" Vol XXI, No 10, pp 1800-1806.

Dehydrogenation of n-butane and isobutane at temps in 500-550° C temp range over Cr catalyst prepd by copptn of Al, Cr hydroxides yielded H_2, C butenes, isobutene, probed that Cr catalyst has good isomerizing properties". Proposed eqn for dependence of extent and rate of dehydrogenation of n-butane and isobutane on time of contact at 553°, at which temp reaction has induction period. Isomerization capacity of Cr catalyst makes E. Herrington, E. Rideal, and S. Ye. Rayk's Aromatization scheme doubtful.

PA 194T26

VERSHININA, K. I.

Modern foreign air filters. Izv. vys. uchsb. zav.; tekh. tekst. prom. no.4:161-165 '63. (MIRA 16:11)

1. Moskovskiy tekstil'nyy institut.

VERSHININA, L.K.

Analysis and methodology of calculating river floods caused by rain in the Maritime Territory. Trudy GGI no.79:75-109 '60.
(MIRA 15:8)
(Maritime Territory--Floods)

VERSHININA, L.K.

Characteristics of the distribution of the snow cover and the spring thaw in Kustanay Province. Trudy GGI no.104:3-14 '63. (MIRA 16:7)

(Kustanay Province—Snow)

VERSHININA, L. K., Cand Tech Sci, "Analysis and ~~com-~~ calcula-
putation of the maximum rain run-off and the flood waters
of rivers Primorskiy Kray."
~~hydrographs~~ of the maritime area rivers," Leningrad, 1961.
(Min of Higher and Sec Spec Ed RSFSR, Leningrad Hydro-Me-
teorological Inst). (KL, 3-61, 213).

VERSHININA, L.K.

Analysis and methods of calculating losses of runoff resulting from rain in the Maritime Territory. Trudy OOI no.73:190-200 '60. (MIRA 13:6)

(Maritime Territory--Runoff)

GOVOROV, A.A.; ALALYKIN, A.B.; GRIGORKIN, V.I.; NESTEROV, N.A.; VERSHININA, L.V.

Heat treatment of alloyed rails. Izv. vys. ucheb. zav.; chern. met. 7 no.10:132-136 '64. (MIRA 17:11)

1. Sibirskiy metallurgicheskiy institut.

ACC NR: AP7002390 SOURCE CODE: UR/0020/66/171/005/1134/1137

AUTHOR: Tomashov, N. D.; Strukov, N. M.; Vershinina, L. P.

ORG: Institute of Physical Chemistry, Academy of Sciences, SSSR (Institut fizicheskoy khimii Akademii nauk SSSR)

TITLE: Effect of continuous renewal of the surface of certain metals on the cathodic process of hydrogen evolution

SOURCE: AN SSSR. Doklady, v. 171, no. 5, 1966, 1134-1137

TOPIC TAGS: cathode polarization, hydrogen, metal surface, lead, tin, iron, nickel, palladium

ABSTRACT: Cathodic polarization curves were recorded for Pb, Sn, Fe, Ni and Pd in 1 N H_2SO_4 under argon at 20°C while the surface of the metal was being continuously renewed by means of an emery wheel. The electrode was cathodically polarized by an external current source. The data indicate that on nickel, the discharge of H^+ ions with the formation of adsorbed atoms and their removal from the electrode surface take place at comparable rates, so that during continuous renewal of the surface the effect of hydrogen overvoltage drop on this metal is appreciable. On lead, however, the hydrogen overvoltage is determined solely by the slowness of the step of discharge of H^+ ions, and therefore the continuous renewal of the surface does not substantially affect the hydrogen overvoltage on lead. From the standpoint of their behavior during

Card 1/2 UDC: 541.13

ACC NR: AP7002390

cleaning, the metals studied are divided into two groups: those which adsorb hydrogen well (Fe, Ni, Pd), and those which adsorb it poorly (Pb, Sn). In the latter group, hydrogen overvoltage is solely determined by the slow discharge step. In the former group, hydrogen overvoltage is determined not only by this step, but also by the slowness of the steps involving removal of hydrogen from the metal surface. Thus, for palladium it was found that at the current density employed, 10 mA/cm^2, 2/3 of the total overvoltage is determined by the slowness of the steps involving removal of hydrogen from the Pd surface, and only 1/3 by the slow discharge step. The paper was presented by Academician Spitsyn, V. I., 22 Mar 66. Orig. art. has: 3 figures and 2 tables.

SUB CODE: 07/ SUBM DATE: 17Feb66/ ORIG REF: 006/ OTH REF: 004

Card 2/2

ALALYKIN, A.B.; GRIGORKIN, V.I.; NESTEROV, N.A.; VERSHININA, L.V.; GOVOROV, A.A.

Properties of heat-treated rails made of 1% chromium and native alloy chromium-nickel steels. Izv. vys. ucheb. zav.; chern. met. 7 no.8:149-154 '64. (MIRA 17:9)

1. Sibirskiy metallurgicheskiy institut.

YERSHINA, M.P.; KUVSHINSKIY, Ye.V.

Mechanical destruction of polymethyl methacrylate and polystyrene as studied by the changes in the molecular weights. Vysokom. soed. 2 no.10:1486-1493 O '60. (MIRA 13:9)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.
(Methacrylic acid) (Styrene)

POSTCARD

ACCESSION NR: AP4043783 S/0190/64/006/008/1450/1457

AUTHOR: Vershinina, M. P.; Regel', V. R.; Cherny^y, N. N.

TITLE: Effect of U-V irradiation on polymer strength

SOURCE: Vy^sokomolekulyarny^ye soyedineniya, v. 6, no. 8, 1964, 1450-1457

TOPIC TAGS: polyme- strength, mechanical stress, UV irradiation, polymer failure, po ymer degradation, capron fiber

ABSTRACT: The dependence of the strength of polymers subjecte' simultaneously to mechanical stress and U-V irradiation on tem- ature and time has been studied for capron fibers. The study is based on principles developed by S. N. Zhurkov. Zhurkov has suggested that the mechanical failure of polymers is a result of the thermal degradation of macromolecules which is activated by mechanical stresses. He has also established the formula

$$\tau = \tau_0 e^{(U_0 - \gamma\sigma)/RT}$$

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ACCESSION NR: AP4043783

for the rupture life (τ) of specimens at temperature T and under stress σ; τ_0, U_0, and γ are constants having specific physical meaning. The rupture life of capron fibers was studied under various conditions. The results of the experiments, given in Figs. 1 and 2 of the Enclosure, show the effect of U-V irradiation on the fiber strength and indicate that in the presence of such irradiation the dependence of the fiber strength on temperature and time cannot be described by Zhurkov's formula with the usual values of the coefficients τ_0, U_0, and γ. The effect of U-V irradiation is explained on the basis of further experiments, analysis of Zhurkov's formula, and the assumption that the failure of fibers is the result of the combination of two processes: degradation in accordance with Zhurkov's formula and degradation caused by irradiation. "The authors express their gratitude to S. N. Zhurkov for his interest in the study and for his valuable advice." Orig. art. has: 6 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe (Physico-technical Institute)

SUBMITTED: 26Sep63 ATD PRESS: 3088 ENCL: 02

SUB CODE: OC, OP NO REF SOV: 010 OTHER: 001

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001859520015-5"

ACCESSION NR: AP4043783 ENCLOSURE: 01

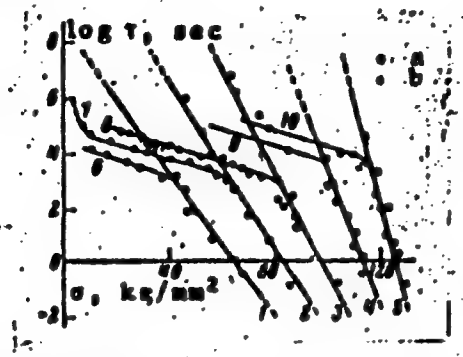

Fig. 1. Dependence of the logarithm of the rupture life log τ of capron fibers on stress σ, with and without U-V irradiation at different temperatures

1, 6 - 130C; 2, 7 - 80C; 3, 8 - 25C; 4, 9 — -60C; 5, 10 - -110C; a - without irradiation; b - with irradiation.

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ACCESSION NR: AP4043783 ENCLOSURE: 02

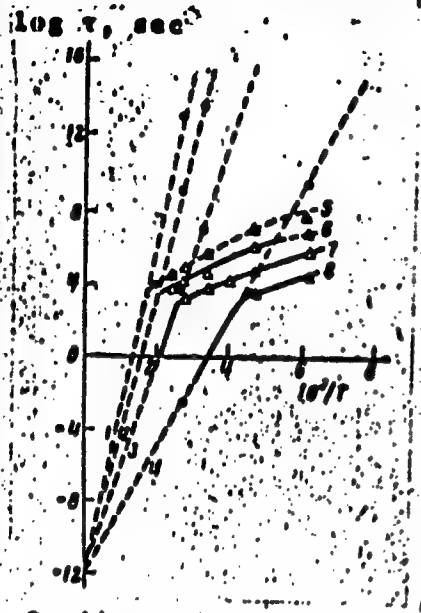

Fig. 2. Dependence of the logarithm of the rupture life log τ on reversed temperature 1/T of capron fibers at various stresses (kg/mm^2)

1, 5 - 0; 2, 6 - 25; 3, 7 - 60; 4, 8 - 100

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ACCESSION NR: AP4043783 S/0190/64/006/008/1450/1457

AUTHOR: Vershinina, M. P.; Regel', V. R.; Cherny*y, N. N.

TITLE: Effect of U-V irradiation on polymer strength

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 8, 1964, 1450-1457

TOPIC TAGS: polymer strength, mechanical stress, UV irradiation, polymer failure, polymer degradation, capron fiber

ABSTRACT: The dependence of the strength of polymers subjected simultaneously to mechanical stress and U-V irradiation on temperature and time has been studied for capron fibers. The study is based on principles developed by S. N. Zhurkov. Zhurkov has suggested that the mechanical failure of polymers is a result of the thermal degradation of macromolecules which is activated by mechanical stresses. He has also established the formula

$$\tau = \tau_0 e^{(U_0 - \gamma\sigma)/RT}$$

Card 1/4

ACCESSION NR: AP4043783

for the rupture life (τ) of specimens at temperature T and under stress σ; τ_0, U_0, and γ are constants having specific physical meaning. The rupture life of capron fibers was studied under various conditions. The results of the experiments, given in Figs. 1 and 2 of the Enclosure, show the effect of U-V irradiation on the fiber strength and indicate that in the presence of such irradiation the dependence of the fiber strength on temperature and time cannot be described by Zhurkov's formula with the usual values of the coefficients τ_0, U_0, and γ. The effect of U-V irradiation is explained on the basis of further experiments, analysis of Zhurkov's formula, and the assumption that the failure of fibers is the result of the combination of two processes: degradation in accordance with Zhurkov's formula and degradation caused by irradiation. "The authors express their gratitude to S. N. Zhurkov for his interest in the study and for his valuable advice." Orig. art. has: 6 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe (Physico-technical Institute)

SUBMITTED: 26Sep63 ATD PRESS: 3088 ENCL: 02

SUB CODE: OC, OP NO REF SOV: 010 OTHER: 001

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001859520015-5"

ACCESSION NR: AP4043783

ENCLOSURE: 01

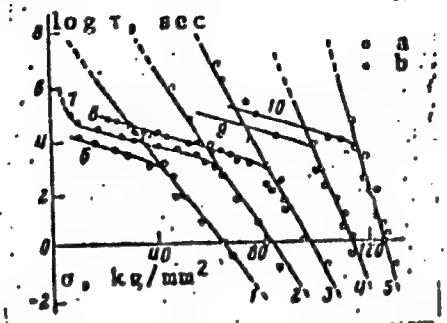

Fig. 1. Dependence of the logarithm of the rupture life log τ of capron fibers on stress σ, with and without U-V irradiation at different temperatures

1, 6 - 130C; 2, 7 - 80C; 3, 8 - 25C; 4, 9 — -60C; 5, 10 - -110C; a - without irradiation; b - with irradiation.

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ENCLOSURE: 02

ACCESSION NR: AP4043783

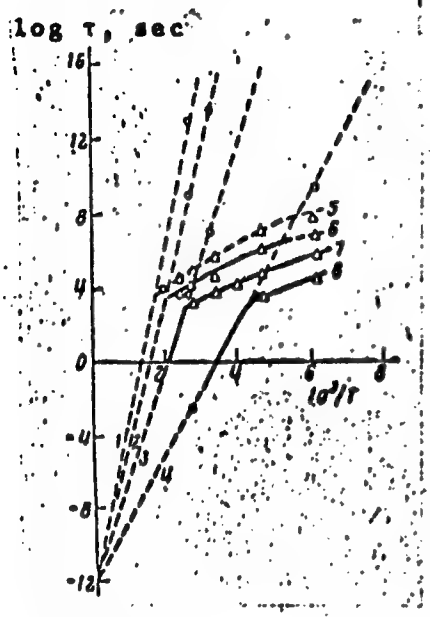

Fig. 2. Dependence of the logarithm of the rupture life log τ on reversed temperature 1/T of capron fibers at various stresses (kg/mm²)

1, 5 - 0; 2, 6 - 25; 3, 7 - 60; 4, 8 - 100

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S/190/60/002/010/008/026
B004/B054

AUTHORS: Vershinina, M. P., Kuvshinskiy, Ye. V.

TITLE: Study of the Mechanical Destruction of Polymethyl Methacrylate and Polystyrene on the Basis of Changing Molecular Weight

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 10, pp. 1486-1493

TEXT: The reduction of the molecular weight of polymers in mechanical crushing observed by various investigators induced the authors to carry out the following experiments: Chips were cut off on a turning lathe from rods of polymethyl methacrylate with a molecular weight determined viscosimetrically in benzene between $0.58 \cdot 10^6$ and $8.4 \cdot 10^6$, of polystyrene with a molecular weight between $0.14 \cdot 10^6$ and $1.4 \cdot 10^6$. The thickness of chips was varied between 3 and 75 μ, the turning speed between 1.6 and 70 cm/sec. The intrinsic viscosity $[\eta]_{cutt}$ of the chips was determined as a function of the initial intrinsic viscosity $[\eta]_{init}$ (Fig. 1). The higher the initial molecular weight of the polymer, and the thinner the

chips, the more $[\eta]_{cutt}$ decreased. This effect is discussed as a consequence of the destruction on the surfaces newly formed during cutting (Fig. 2); a "destruction depth" $g = (\Delta[\eta]/[\eta])\cdot h$, where h is the thickness of the chips. Fig. 3 shows the function $g = g(h)$ which is not linear. Further, the authors experimentally determined $g/h = \Delta[\eta]/[\eta]$ as a function of the cutting speed v (Fig. 4), and the function $g = f(\sqrt{h/v})$ (Fig. 5). The latter yielded a family of curves with linear initial sections having the same tangent. The authors therefore assume diffusion processes. They tried to find a universal curve $g/h = f(\sqrt{1/vh})$. The destruction depth should be determined by the diffusion coefficient D. Fig. 6 shows that no universal curve but another family of curves was obtained. The value of D was found to be 10^{-4} cm^2/sec which does not agree either with the order of magnitude of the gas diffusion (10^{-6} cm^2/sec) or with that of the temperature coefficient of heat conductivity (10^{-3} cm^2/sec). Thus, the destruction processes do not only depend on the rupture of chemical bonds on the cut surface, but they enter deeper layers of the material, develop with time, and are limited by factors which are not yet known. There are 6 figures and 10 references: 16 Soviet and 4 US.

Study of the Mechanical Destruction of Polymethyl Methacrylate and Polystyrene on the Basis of Changing Molecular Weight

S/190/60/002/010/008/026
B004/B054

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy AN SSSR (Institute of High-molecular Compounds of the AS USSR)

SUBMITTED: April 21, 1960

Card 3/3

VERSHININA, M.P., REGEL', V.R., CHERNYY, N.N.

Effect of UV radiation on the kinetics of flow and destruction of caprone fibers.

Report presented at the 13th Conference on high-molecular compounds Moscow, 8-11 Oct 62

SHISHKIN, N.I.; VERSHININA, M.P.

Temperature dependence of the electric conductivity of polymers.
Fiz.tver.tela 1 no.5:798-802 My '59. (MIRA 12:4)

1. Fiziko-tekhnicheskiy institut AN SSSR, Leningrad.
(Polymers--Electric properties)

VERSHININA, M.P.; REGEL', V.R.; CHERNYY, N.N.

Effect of ultraviolet radiation on the strength of polymers. Vysokom. soed. 6 no.8:1450-1457 Ag '64. (MIRA 17:10)

1. Fiziko-tekhnicheskiy institut imeni A.F.Ioffe.

NIKITIN, Yu.P.; TARANUKHINA, L.V.; SEREDINA, L.N.; PUSHKAREVA, S.A.; POPOVA, I.A.; VERSHININA, N.V.

Activity of oxides in liquid aluminum silicates. Izv.vys.ucheb. zav.; tsvet.met. 5 no.1:74-76 '62. (MIRA 15:2)

1. Ural'skiy politekhnicheskiy institut, kafedra tekhnologii silikatov.
(Aluminum silicates) (Activity coefficients)

VERSHININA, O.A.

3(7) PHASE I BOOK EXPLOITATION SOV/2131

Akademiya nauk SSSR. Morskoy gidrofizicheskiy institut

Termika morya. Khimiya morya (Thermal Regime of the Sea. Chemistry of the Sea) Moscow, AN SSSR, 1958. 145 p. (Series: Its: Trudy, tom 13) Errata slip inserted. 1,300 copies printed.

Resp. Ed.: A.G. Kolesnikov, Doctor of Physical and Mathematical Sciences; Ed. of Publishing House: L.K. Nikolayeva; Tech. Ed.: N.F. Yegorova.

PURPOSE: This collection of articles is intended for geophysicists, hydrophysicists, and oceanographers.

COVERAGE: These articles deal with problems in the physics and chemistry of sea water. Individual papers treat the turbulent thermal conductivity and heat exchange in sea water, the pulsations in air temperature, the salinity of the Black Sea, the determination of calcium, magnesium, and copper in sea water, and the determination of sodium in atmospheric precipitates. Figures, tables, and graphs accompany the articles. There are 121 references: 92 Soviet, 18 English, 8 German, 2 French, and 1 Swedish.

AVAILABLE: Library of Congress

MM/sfm
8-11-59

AUTHORS: Skopintsev, B. A., Gubin, F. A., Vorob'yeva, R. V., Vershinina, O. A. 20-119-1-33/52

TITLE: The Composition of the Salts of the Chernoye Sea (Black Sea) (Solevoy sostav vody Chernogo morya)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol. 119, Nr 1, pp. 121-124 (USSR)

ABSTRACT: In October 1954 and in June 1955 water samples were taken at 5 points from all depths in the open part of the sea near the 43th degree north latitude. The chlorine content was determined argentometrically, the alkalinity by direct titration with HCl, the sulfates by the weight method and Ca as well as Mg complexometrically. Table 1 gives the average quantities of this determination. The highest content deviations of individual components at the same depths of all 5 places from the average attained 4%, which was characteristic of the upper layer (0-150 m). Farther down the deviations are less than 1%, except Ca and alkalinity. The absolute content of all salt components in the Chernoye Sea (Black Sea) is smaller than in the ocean, except the alkalinity. The chlorine content increases from the surface to the bottom. The change

Card 1/4

of other ions at the vertical is represented in table 2 as ratio to the chlorine content. In this manner the contents are compared with those of the oceans, where the latter are constant (ref. 1). The elevated values of the cited coefficients in the upper 200 m of the Chernoye Sea can be explained by a comparatively higher influence of the waters of the flow of the rivers for the higher values of these coefficients than they are characteristic for the ocean. The changes of the ratios $\frac{SO_4}{Cl\ (‰)}$ and $\frac{HCO_3}{Cl\ (‰)}$ are connected with the biochemical and biological processes occurring in the Chernoye Sea: a) the reduction of SO_4^{2-} at the bottom of the sea with a simultaneous formation of hydrogen sulfide and HCO_3^-, b) the oxidation of H_2S in an intermediary zone (from 125-150 m to 250-300 m) under formation of sulfates and a corresponding decrease in HCO_3^- (ref. 2). A marked change of Ca^{2+} in the water near the bottom was not observed. Table 3 gives the calculated average composition of the water in the Chernoye Sea. Little difference in comparison with reference 4 is to

Card 2/4

be found. At a depth of 150 m from the bottom the salt content is close to the average content of ocean water (ref. 1). Further the salt content in the Chernoye Sea at a depth of 0,150 and 2000 m was calculated. According to the modern conception of the water balance of the Chernoye Sea 400 km^2 water annually run out through the Bosfor (Bosporus). The river-flow into the sea is 350 km^2. From this the average quantity of salt is calculated which is brought out through the Bosfor (Bosporus) and which is brought in with the rivers. As the salt balance of the Chernoye Sea is balanced, the difference resulting from the above-mentioned components represents that quantity of salt which annualy runs into the Chernoye Sea from the Mramornoye (Marmara) Sea. The waters coming in this way amount to $\sim$195 km^3. In order to maintain equilibrium concentrations of Ca^{2+} and HCO_3^- in the Chernoye Sea, 12 or 85 km^3 respectively less of water from the Mramornoye Sea is needed. The quantity of $CaCO_3$ corresponding to the above-mentioned quantities of the Marmara-water will evidently be precipitated from the water of the Chernoye Sea. For Ca^{2+} they represent $5,4.10^6$ tons or about $\sim$30% of the

The Composition of the Salts of the Chernoye Sea (Black Sea) 20-119-1-33/52

Ca^{2+} annualy brought into the Chernoye Sea by the rivers. Such a chemogeneous carbonate-sedimentation mainly takes place in the region near the coast (references 3,5). Then the authors discuss the statements of reference 8 and state that for the displacement of a water layer of 17 m thickness about 130 years would be necessary, which disproves the above-mentioned statements. There are 3 tables and 8 references, 8 of which are Soviet.

ASSOCIATION: Morskoy gidrofizicheskiy institut Akademii nauk SSSR (Marine Hydrophysical Institute AS USSR)

PRESENTED: July 13, 1957, by N. M. Strakhov, Member, Academy of Sciences, USSR

SUBMITTED: May 12, 1957

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VERSHININA, O.A.

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PHASE I BOOK EXPLOITATION SOV/5542

Akademiya nauk SSSR. Morskoy gidrofizicheskiy institut

Gidrometeorologiya, Gidrokhimiya (Hydrometeorology, Hydrochemistry) Moscow, 1959. 173 p. (Series: Its: Trudy, tom 16) Errata slip inserted. 1,200 copies printed.

Resp. Ed.: A.A. Ivanov; Ed. of Publishing House: L.K. Nikolayeva; Tech. Ed.: I.N. Dorokhina.

PURPOSE: This publication is intended for meteorologists, hydrologists, and chemists interested in the chemical composition of sea water.

COVERAGE: This volume of the Transactions of the Marine Hydrophysical Institute AS USSR contains articles on problems in hydrometeorology and hydrochemistry. Individual articles deal with the heat balance of the Arctic atmosphere, an experimental study of the types of atmospheric circulation, and the occurrence in sea water of such substances as sulphur, organic phosphorus, and arsenic. No personalities are mentioned. References follow individual articles.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress

SKOPINTSEV, B.A.; KARPOV, A.V.; VERSHININA, O.A.

Experimental study of hydrogen sulfide formation and oxidation taking as an example the Black Sea. Gidrokhim. mat. 31:127-141 '61. (MIRA 14:3)

1. Morskoy gidrofizicheskiy institut Akademii nauk SSSR, g. Lyublino, Moskovskaya oblast'.
(Black Sea—Hydrogen sulfide)

L 33167-66 EWT(1) GW

ACC NR: AP6014281 (N) SOURCE CODE: UR/0213/66/006/002/0251/0260

25

B

AUTHOR: Skopintsev, B. A.; Timofeyeva, S. N.; Vershinina, O. A.

ORG: Marine Hydrophysics Institute, AN UkrSSR (Morskoy gidrofizicheskiy institut AN

TITLE: Organic carbon in the waters near the equatorial and southern parts of the Atlantic Ocean and in the Mediterranean Sea

12

SOURCE: Okeanologiya, v. 6, no. 2, 1966, 251-260

TOPIC TAGS: ocean property, oceanographic expedition, ~~oceanographic ship, organic~~ carbon

ABSTRACT: Observational data carried out during the 12th and 15th cruises of the research vessel "Mikhail Lomonosov" in 1962—1964 have been used for studies of the total and suspended organic carbon and of the permanganate oxidizability in alkaline or neutral media. It has been determined that the organic carbon content in the southern and northern parts of the Atlantic Ocean and in the Mediterranean Sea is almost the same, averaging 1.5 mg/l for the Atlantic Ocean. The carbon content shows a 1.5 decrease from the surface down to 3000 m. A 1.3 decrease is observed from the surface down to 150 m. The suspended carbon content also decreases with depth; it comprises ~ 3—9% of the total carbon. Permanganate oxidizability diminishes approximately by 2 from the surface down to 3000 m. The oxidizability/organic carbon ratio

UDC: 551.464.626(262/263/264)

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L 33167-66

ACC NR: AP6014281 O

(O_2 mg/l: C_{org} mg/l) averages 0.5 if the oxidizability determinations are made in an alkaline medium and 0.15 if determinations are made in a neutral medium. Orig. art. has: 6 tables. [Based on authors abstract.] [NT]

SUB CODE: 08/ SUBM DATE: 23Dec65/ ORIG REF: 009

LS

Card 2/2

SKOPINTSEV, B.A.; GUBIN, F.A.; VOROB'YEVA, R.V.; VERSHININA, O.S.

Salt composition of the Black Sea water. Dokl. AN SSSR 119 no.1:121-124 Mr '58. (MIRA 11:4)

1.Morskoy gidofizicheskiy institut Akademii nauk SSSR. Predstavleno akademikom N.M. Strakhovym.
(Black Sea--Salinity)

M-8

USSR/Cultivated Plants - Ornamental.

Abs Jour : Ref Zhur - Biol., No 20, 1958, 91910

Author : Vershinina, P.D.

Inst : Scientific Research Institute for Agriculture in the Extreme North

Title : Flower Growing in Transpolar Regions.

Orig Pub : Byul. nauchno-tekhn. inform. N.-i., in-t s. kh. Krayn. Severa, 1957, No 3, 49-50.

Abstract : To provide the city of Salehard with decorative green growth the Yamalsk Agricultural Experimental Station raised seedlings of different ripening periods to insure uninterrupted flowering. The seeds were sown in boxes in the hothouse from March 1 to April 15. On June 25 the seedlings were transplanted into open ground. The technique is described. Regardless of falling temperature

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USSR/Cultivated Plants - Oenamental. M-8

Abs Jour : Ref Zhur - Biol., No 20, 1958, 91910

the flowering continued on the whole until late fall. The last bouquets of flowers were picked from under the snow on December 10. -- M.N. Treskina.

Card 2/2

VERSHININA, R.; SAMOKHINA, M.; BIKKE, R., master-povar; ZIMOV, P. (Alma-Ata); ZHANTUAN, A., instruktor-kulinar

Letters to the editor. Obshchestv.pit. no.5:44-45 My '62. (MIRA 15:5)

1. Nachal'nik planovogo otdela tresta stolovykh, Krivoy Rog (for Vershinina). 2. Zamestitel' nachal'nika otdela obshchestvennogo pitaniya Upravleniya rabochego snabzheniya, Karaganda (for Samokhina). 3. Trest stolovykh g. Kishineva (for Zhantuan).
(Restaurants, lunchrooms, etc.)

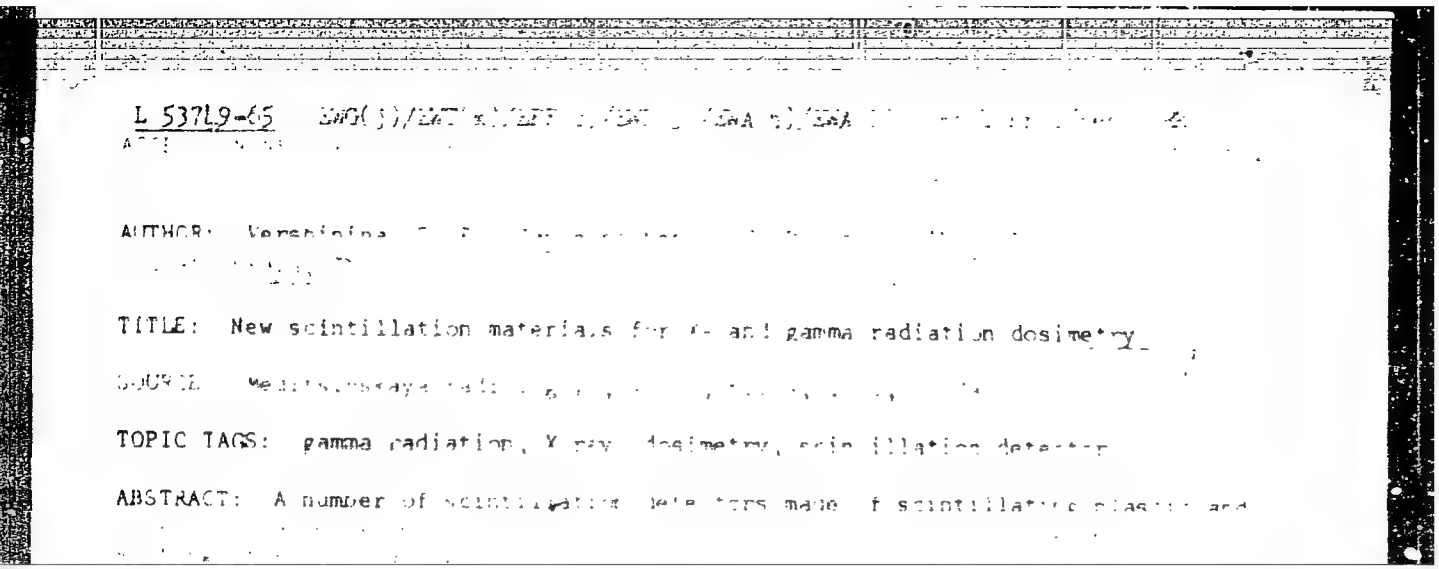
VERSHININA, R.N.; RYBALKO, Ye.F.

The relationships of two-year-old children. Uch.zap.Len.un. no.214:45-53 '56. (MLRA 10:3)
(Child study).

VERSHININA, S.P.; ZAPLESHCHENKO, G.P.; KOLESNIKOV, L.N.; SHEFATOVSKAYA, Zh.V.; CHERNOBAY, A.V.; TSIRLIN, Yu.A.

New scintillating materials used in X-ray and β-ray dosimetry. Med. rad. 10 no.4:73-74 Ap '65. (MIRA 18:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut monokristallov, stsintilliyatsionnykh materialov i osobo chistykh khimicheskikh veshchestv, Khar'kov.



L 53719-65

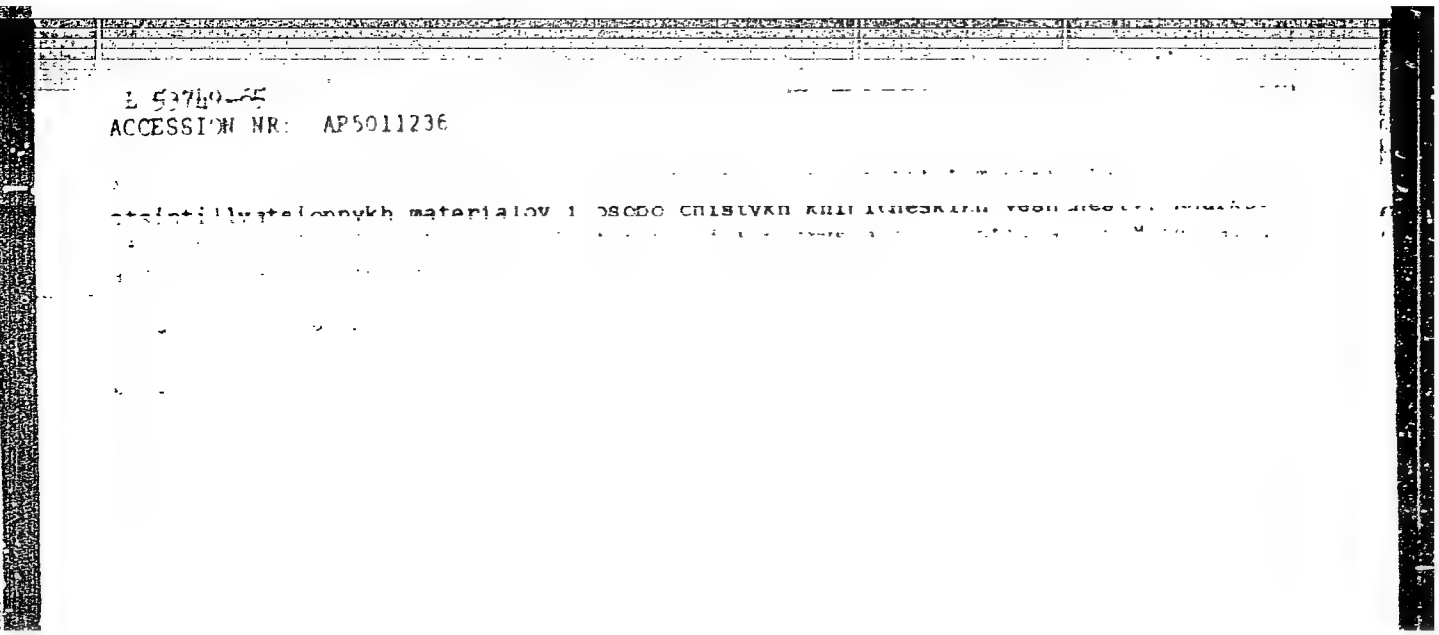
AUTHOR:

TITLE: New scintillation materials for x- and gamma radiation dosimetry

SOURCE:

TOPIC TAGS: gamma radiation, X ray, dosimetry, scintillation detector

ABSTRACT: A number of scintillation detectors made of scintillating plastics and



ACCESSION NR: AP5011236

AUTHORS: Teiyin Yu, A. Verebinina, S. B., Bagualyu, V. B.

TRANSLATION: The possibility is considered of using detectors, consisting of a scintillating plast[illegible] which finely dispersed

the "hardness variation" of such dosimeters on different parameters.

L 31836-65

ACCESSION NR: AR5005653

LITVINENKO, M.S.; TYUTYUNNIKOV, Yu.B.; VERSHININA, S.V.; DARIYENKO, V.I.; VOROB'YEV, D.D.; TKACHENKO, N.A.

Increase of the yield of coke-chemical products by the pyrolysis of heavy petroleum oils in coke ovens. Koks i khim. no.12:8-10 '60. (MIRA 13:12)

1. Khar'kovskiy nauchno-issledovatel'skiy uglekhimicheskiy institut (for Vershinina). 2. Gorlovskiy koksokhimicheskiy zavod (for Tkachenko).
(Coke industry—By-products)

Sov/68-59-10-1/24

AUTHORS: Aronov, S.G., Bragilovskaya, O.N., Vershinina, S.V., Sintserova, L.G., and Tsepurit, V.Ya.

TITLE: Resources of Raw Materials and Coking Technology of the Donets Gas Coals on the Coking Gas Works

PERIODICAL: Koks i khimiya, 1959, Nr 10, pp 3-8 (USSR)

ABSTRACT: The distribution of the total output of coal from the Donets basin indicated that gas and long flame, ie low rank coals constitute the largest proportion (35.7% about 29 million tons) of the coal mined. The structure of the consumption of the mined coal (table 1) indicated that gas coals are used mainly for power generation. As, however, a majority of consumers require lump coal, there is a possibility of developing carbonisation of gas coals. Technical and economical aspects of the above possibility were investigated and are discussed in the paper. In 1958 the amount of fine gas coals amounted to 5 million tons (mainly burned in industrial and domestic grates) and will increase in 1965 to 9 million tons. The available

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Resources of Raw Materials and Coking Technology of the Donets Gas Coals on the Coking Gas Works

resources of gas coals will steadily increase due to the sinking of new mines and a gradual withdrawal of gas coals from their use in railway transport. In order to obtain technical data on coking gas coals alone, laboratory and full scale carbonisation tests of two types of Donets gas coals (vol. matter about 35 and 38% respectively) were carried out. Proximate analyses of the coals tested - table 2, coking conditions - table 3, results of tests of the coke produced - table 4. It was established that a well fused coke, but of a lower size distribution and a lower strength can be obtained. The quality of the coke improves with an increasing rate of coking. In the normal size ovens the best results were obtained at a coking period of 14 hours and temperature in the control flues: coke side 1334° and pusher side 1316°C. It is considered that the construction of narrower than usual ovens for coking gas coals would permit higher coking rates at lower flue temperatures. Cokes

Resources of Raw Materials and Coking Technology of the Donets Gas Coals on the Coking Gas Works

produced were tested for calorific value, ignition temperature and combustibility (table 5). The results indicated that the coke from gas coals is more reactive than normal metallurgical coke and can be used as an industrial and domestic fuel. The determination of the quality and yields of by-products was carried out on a 5kg laboratory coking installation. For comparison, an industrical coking blend was carbonised under the same conditions. The yields of by-products are shown in table 6 and the composition, specific gravity and calorific value of the gas produced in table 7. Characteristic features of by-products from gas coals: higher yield of phenols in tar, higher tar and benzole yields, coke oven gas contains less hydrogen and more methane. It was calculated that the value of raw products obtained on coking of gas coals considerably exceeds the value of coal when used for power generation. It is concluded that the construction of coking gas works in the Donets basin, near to the coal mines

Resources of Raw Materials and Coking Technology of the Donets Gas Coals on the Coking Gas Works

would be economically advantageous. There are 7 tables and 3 Soviet references.

ASSOCIATION: UKhIN

TYUTYUNNIKOV, Yu.B.; VERSHININA, S.V.; VASHCHENKO, L.A.; SHEPEL', A.V.

Selecting oils for charges in order to increase benzene and gas output. Koks i khim. no.16:43-45 '61. (MIRA 15:2)

1. Ukrainskiy uglekhimicheskiy institut.
(Benzene)
(Gases)

S/068/60/000/012/001/005
E071/E435

AUTHORS: Litvinenko, M.S., Tyutyunnikov, Yu.B., Vershinina, S.V., Dariyenko, V.I., Vorob'yev, D.D. and Tkachenko, N.A.

TITLE: An Increase in the Yield of Coke-Oven By-Products by the Pyrolysis of Heavy Petroleum Oils in Coke Ovens

PERIODICAL: Koks i khimiya, 1960, No.12, pp.8-10

TEXT: The results of laboratory and plant experiments on the possible increase in the yield of gas and benzole on coke blends with additions of fuel oil are described. Laboratory experiments (no details given) gave the following indications: 1) Additions of fuel oil to coal increase the bulk density of the charge. 2) The yield of gas, raw benzole and tar is higher than from ordinary coal blends. 3) The distribution of fuel oil between coking products varies within wide limits, depending on the amount of fuel oil added and coking conditions. More oil is transferred to gas and benzole when oil additions to coal are small and the free space temperatures are high. Under such conditions, up to 63.35% of oil is transferred into gas and up to 10.7% into

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An Increase in the Yield of Coke-Oven By-Products by the Pyrolysis of Heavy Petroleum Oils in Coke Ovens

raw benzole, but the amount of tar formed decreases. 4) The composition of gas obtained on coking of charges containing fuel oil is characterized by somewhat increased content of hydrogen and unsaturated compounds. The composition of gas depends mainly on the degree of pyrolysis of the fuel oil vapours. 5) In all cases when additions of oil were made, a decrease in the formation of pyrogenic water was observed. 6) The quality of raw benzole and tar on coking blends containing fuel oil also depends on the conditions of pyrolysis. If the oil vapour suffered a high degree of pyrolysis, then in addition to an increased yield of benzole, the content of benzole fraction in the raw benzole was at a maximum (68.56%) and washing losses were only slightly higher than with benzole obtained from normal coal blends (from 6.5 to 7.5%). At low temperatures of the free space and other conditions being equal, the content of the benzole fraction in raw benzole decreased from 68.56 to 63.60% and washing losses increased to 10.79%. A further decrease in the degree of pyrolysis by decreasing the

S/068/60/000/012/001/005
E071/E435

An Increase in the Yield of Coke-Oven By-Products by the Pyrolysis of Heavy Petroleum Oils in Coke Ovens

residence time of gases in the free space leads to a further increase in washing losses up to 13.53% and a decrease in the content of benzole fraction in the raw benzole to 63.3%. 7) The tar produced from oiled coal has a somewhat lower specific gravity, increased content of free carbon and an insignificant decrease in the content of phenols. 8) The mechanical strength of coke remained unchanged. Plant experiments were carried out on four batteries of ovens of the ПВР-46 (PVR-46) type. The temperature of the free space of ovens was comparatively low and varied within the following limits: No.1 battery 695 to 753°C; No.2 725 to 770°C; No.3 612 to 707°C and No.4 650 to 760°C. The coking time on No.1 and 2 batteries was 13 hours 36 minutes and on No.3 and 4 15 hours 25 minutes. Temperatures in the control flues: No.1 and 2 pusher side 1325°C, coke side 1375°C; No.3 and 4 pusher side 1235°C, coke side 1280°C. Addition of 2% fuel oil (types 80 and 20) was effected by spraying the blend on the conveyor belt leading to the service bunkers. Mixing of

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S/068/60/000/012/001/005
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An Increase in the Yield of Coke-Oven By-Products by the Pyrolysis of Heavy Petroleum Oils in Coke Ovens

the blend was done by 6 disc ploughs placed under the conveyor. The composition and properties of the coal blend prior to and during the experimental periods are given in Table 1 (moisture 10%, volatile matter 26 to 27%, - 3 mm fraction 89 to 90%). The increase in the bulk density of the charge (from 740 to 751 kg/m^3) required higher flue temperatures, these were increased (by 10°C) insufficiently due to the poor state of the ovens. Mechanical properties of coke (Table 2) remained practically the same. There was some increase in the proportion of large fractions (above 60 mm) and in the volatile content of coke. The content of benzole in raw gas increased from 40.3 g/m^3 to 46.1 g/m^3 and with a uniform addition of oil of 2 to 2.5% to 48 to 50 g/m^3. The composition of scrubbed gas remained practically the same (Table 3) but its daily output increased from 1232 to 1286 thousand nm^3 (4.4%). Specific gravity of tar decreased by 0.017 and the yield of its light fraction increased by 0.4%. The composition of tar from primary condensers somewhat changed: its specific gravity

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An Increase in the Yield of Coke-Oven By-Products by the Pyrolysis of Heavy Petroleum Oils in Coke Ovens

increased by 0.015 and the yield of light fractions decreased by 0.9%. Washing losses of benzole increased by 0.47%, its specific gravity decreased from 0.875 to 0.872; the content of the benzole fraction decreased from 68.33 to 67.35%; the content of toluol increased from 15.06 to 15.83%. 9.22% of the fuel oil added to coal was transferred into raw benzole, 37.2% into gas and 16.04% into tar. It is concluded that in order to increase the output of gas, benzole and tar additions of fuel oil to coal are recommended. The proportion of fuel oil which can be added should be established for each individual works. The following participated in the work: V.Ya.Tsepurit, A.V.Shepel', F.A.Pilyasov, L.A.Vashchenko, S.D.Brodskiy, M.I.El'yashev, G.S.Iskra, Ya.D.Semisalov, S.P.Kalganov, I.I.Mikhaylov, M.T.Petrenko, and A.Ya.Val'skiy. There are 3 tables and 1 Soviet reference.

ASSOCIATIONS: UKhIN Litvinenko,M.S.,Tyutyunnikov,Yu.B.,Vershina,S.V.; Gorlovskiy koksokhimicheskiy zavod (Gorlovka Coking Works) Dariyenko,V.I., Vorob'yev,D.D., Tkachenko,N.A.

Card 5/5

KARPOV, S.P.; POPOV, V.M.; KOLMAKOVA, A.G.; VERSHININA, T.A.

Results of tick control in a focus of tick-borne encephalitis [with summary in English]. Med.paraz. i paraz.bol. 27 no.6: 658-662 N-D '58. (MIRA 12:2)

1. Iz Tomskogo nauchno-issledovatel'skogo instituta vaktsin i syvorotok (dir. instituta B.G. Trukhmanov).
(ENCEPHALITIS, EPIDEMIC, prev. & control,
Russian tick-borne, tick control (Rus))
(TICKS,
eradication in Russian tick-borne encephalitis foci (Rus))

VERSHININA, T. A., FEDOSOV, YU. V., IGOLKIN, N. I.

"A virological examination of the Gamasidae in the foci of tick-borne encephalitis of Western Siberia." Page 93

Desyatoye soveshchaniye po parazitologicheskim problemam i prirodnoochagovym boleznyam. 22-29 Oktyabrya 1959 g. (Tenth Conference on Parasitological Problems and Diseases with Natural Foci 22-29 October 1959), Moscow-Leningrad, 1959, Academy of Medical Sciences USSR and Academy of Sciences USSR, No. 1 254pp.

FEDOROV, Yu.V.; VERSHININA, T.A.; IGOLKIN, N.I.

Experimental infection of Gamasoidea ticks with the virus of tick encephalitis. Vop.virus 4 no.4:501-502 Jl-Ag '59. (MIRA 12:12)
(ENCEPHALITIS, virology)

IGOLKIN, N.I.; VERSHININA, T.A.; FEDOROV, Yu.V.

Role of the Gamasidae in epizoology of tick-borne encephalitis.
Med.paraz.i paraz.bol. 37 no.5:568-571 S-O '59. (MIRA 13:5)

1. Iz Tomskogo nauchno-issledovatel'skogo instituta vaktsin i syvorotok (direktor B.G. Trukhmanov).
(ENCEPHALITIS EPIDEMIC transm.)
(TICKS)

NOVIKOVA, V.N.; SAGAYDAK, L.P.; VERSHININA, T.A.; IGOLKIN, N.I.

Natural leptospirosis focus in Shegarskiy District, Tomsk Province. Trudy Tom NIIVS 12:65-69 '60 (MIRA 16:11)

1. Tomskiy meditsinskiy institut i Tomskiy nauchno-issledovatel'skiy institut vaktsin i syvorotok.

*

KARPOV, S.P.; YAV'YA, A.R.; KOLMAKOVA, A.G.; VERSHININA, T.A.; FEDOROV, Yu.V.; YEROFEYEV, V.S.

Sanitation of the natural focus of tick-borne encephalitis in inhabited areas. Med. paraz. i paraz. bol. 32 no.3:292-296 My-Je'63 (MIRA 17:3)

1. Iz Tomskogo nauchno-issledovatel'skogo instituta vaktsin i syvorotok (direktor B.G. Trukhmanov).

VERSHININA, T.A.

Tick Ixodes apronophorus P. Sch. (1924) in Shegarskiy District, Tomsk Province. Zool. zhur. 43 no.12:1873-1874 '64
(MIRA 18:2)

1. Tomskiy nauchno-issledovatel'skiy institut vaktsin i syvorotok.

L 33301-66 EWT(1)/FCC GW

ACC NR: AP6011707 SOURCE CODE: UR/0203/66/006/002/0365/0369

AUTHOR: Vershinina, T. I.; Gorovoy, M. D.; Latypova, R. Kh.; Mishin, V. M.

ORG: Institute of Terrestrial Magnetism, the Ionosphere, and Radio-Wave Propagation, SO AN SSSR (Institut zemnogo magnetizma ionosferyi i rasprostranenrya radiovoln SO AN SSSR)

TITLE: Two quasicircular zones of maximal magnetic activity

SOURCE: Geomagnetizm i aeronomiya, v. 6, no. 2, 1966, 365-369

TOPIC TAGS: magnetic activity, ionosphere

ABSTRACT: In this investigation the authors attempted to determine the position of the zone of maximum magnetic activity during July and December, 1958, using for this purpose the magnetograms of 21 observatories, the coordinates of which are given in a table. The curves of the latitudinal distribution of magnetic activity along 12 successive meridians of local geomagnetic time and the "instantaneous" charts of the zones of maximum magnetic activity and the zones of the maxima of the latitudinal variation of activity are plotted. The last two represent quasicircular zones centered on geomagnetic latitudes 66 and 78°. The conclusion concerning the existence of two quasicircular zones of maximum magnetic activity at latitude 66° and 78° confirms previously made hypotheses that the latitudinal belts near 66° and 78° coincide with zones of increased conductivity of the ionosphere disturbed by corpuscular intrusions. One of these hypotheses was developed from an analysis of the latitudinal distribution of the parameters of the LT-component of the diurnal variation of the magnetic

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activity and the other hypothesis from an analysis of the latitudinal distribution of the parameters of the UT-component of the diurnal variation of the magnetic activity. Consequently, the conclusion of the existence of two quasicircular zones of high conductivity of the disturbed ionosphere can be considered as confirmed in three different and independent investigations. The results of this study do not contradict the conclusion concerning the existence of an "oval" zone of maximum magnetic activity if the latter term indicates the maxima of S_a. The figures show that in each hemisphere two regions of maximum activity encompassing sections of the quasicircular zones are observed during the summer. These two regions are divided by a space of relatively low activity and do not form a closed oval. Orig. art. has: 1 table, 3 figures, and 2 formulas.

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Card 2/2

VERSHININA, V. A.

USSR/Physics - Magnetic Hysteresis

Nov/Dec 52

"Effect of Plastic Deformation on Oscillational and Rotational Magnetic Hysteresis in Dynamo Iron," V. I. Drozhshina, R. I. Yamus, and V. A. Vershinina, Inst of Phys of Metals, Ural Affiliate, Acad Sci USSR

Iz Ak Nauk, SSSR, Ser Fiz, Vol 16, No 6, pp 690-694

Limited exptl material processed leads to tentative conclusions that cold working and mechanical deformation possess deteriorating effect on rotational and oscillational hystereses, which values strongly depend also on structural states of samples.

PA 251T30

1. DROZHZHINA, V. I., YANUS, R. I., VERSHINIA, V. A.

2. USSR '600)

4. Iron

7. Effect of plastic deformation on vibrational and rotational magnetic hysteresis in dynamo iron. Izv. AN SSSR. Ser. fiz 16 no. 6, 1952

9. Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.

DROZHZHINA, V. I.; YANUS, R. I.; VERSHININA, V. A.

Hysteresis

Effect of plastic deformation on vibrational and rotational magentic hysteresis in dynamo iron. Ser. fiz. 16, No. 6, 1952.

Monthly List of Russian Accessions, Library of Congress, June 1953. Uncl.

BASKAKOV, A.P.; VERSHININA, V.S.

Method of studying heat transfer to fine-grained material fluidized in the packing bed. Zhur. prikl. khim. 37 no.11: 2445-2453 N '64 (MIRA 18:1)

BASKAKOV, A.P.; VERSHININA, V.S.

Heat transfer between a packing and a fluidized bed in interstitial channels. Inzh.-fiz. zhur. 6 no.8:3-9 Ag '63. (MIRA 16:10)

1. Ural'skiy filial AN SSSR.